



NATIONAL INSTITUTE OF TECHNOLOGY KARNATAKA
SURATHKAL, MANGALORE - 575 025

Course Code – CS254
Course Name – Database Systems Lab

Lab - 03
Date – February 9, 2022

Submitted To
Dr. Annappa B
Department of Computer Science and Engineering
National Institute of Technology Karnataka, Surathkal

Submitted By
Md Rakib Hasan
Roll – 201CS132
Department of Computer Science and Engineering

1. Create a table cust with following columns

Cust id as not null,

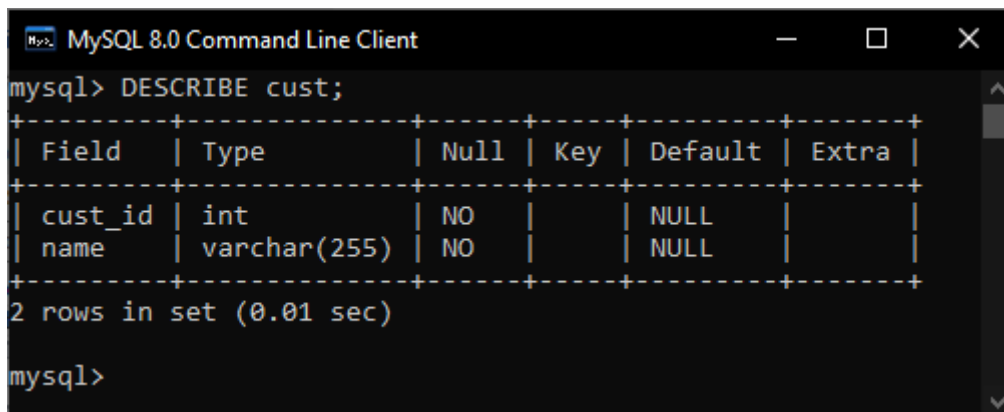
Name

Assume appropriate data types.

```
CREATE DATABASE lab;
USE lab;
CREATE TABLE cust (
    cust_id INT NOT NULL,
    name VARCHAR(50));
```

a. Alter the table cust to add not null constraint to name.

```
ALTER TABLE cust
CHANGE name
name VARCHAR(255) NOT NULL;
```

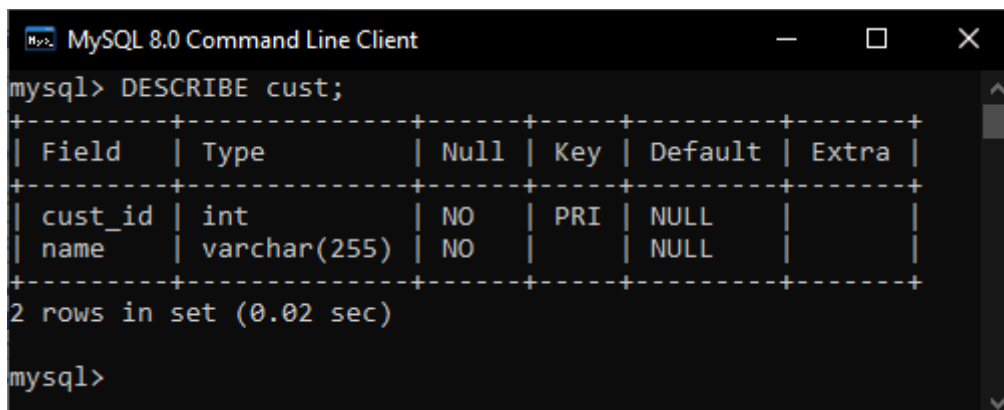


```
mysql> DESCRIBE cust;
+-----+-----+-----+-----+-----+-----+
| Field | Type          | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| cust_id | int           | NO   |     | NULL    |       |
| name   | varchar(255)  | NO   |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
2 rows in set (0.01 sec)

mysql>
```

b. Alter the table cust to add unique constrain to custid.

```
ALTER TABLE cust
ADD UNIQUE (cust_id)
```



```
mysql> DESCRIBE cust;
+-----+-----+-----+-----+-----+-----+
| Field | Type          | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| cust_id | int           | NO   | PRI | NULL    |       |
| name   | varchar(255)  | NO   |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
2 rows in set (0.02 sec)

mysql>
```

Create table student with following columns

Regno

Mark

Where mark $0 \leq \text{mark} \leq 100$.

Assume appropriate data types.

```
CREATE TABLE student (  
    regno INT,  
    mark INT,  
    CHECK (0<=mark<=100));
```

a. Alter the student table to add the constraint to check the length of regno is 4.

```
ALTER TABLE student  
ADD CHECK (LENGTH(regno) = 4)
```

Create a table EMP with the following structure.

EMPNO NUMBER(6)

ENAME VARCHAR(20)

JOB VARCHAR(10)

DEPTNO NUMBER(3)

SAL NUMBER(7,2)

```
CREATE TABLE emp (  
    emp_no INT,  
    ename VARCHAR(20),  
    job VARCHAR(10),  
    dept_no INT,  
    sal INT);
```

a. Allow NULL for all columns except ename and job.

```
ALTER TABLE emp  
CHANGE ename  
    ename VARCHAR(20) NOT NULL;  
ALTER TABLE emp  
CHANGE job  
    job VARCHAR(10) NOT NULL;
```

```
MySQL 8.0 Command Line Client

mysql> DESCRIBE emp;
+-----+-----+-----+-----+-----+-----+
| Field | Type      | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| emp_no | int       | YES  |     | NULL    |       |
| ename  | varchar(20) | NO   |     | NULL    |       |
| job    | varchar(10) | NO   |     | NULL    |       |
| dept_no | int       | YES  |     | NULL    |       |
| sal    | int       | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
5 rows in set (0.01 sec)
```

b. Add a column experience to the emp table. Experience numeric null allowed. Modify the column width of the job field of emp table.

```
ALTER TABLE emp
ADD COLUMN experience VARCHAR(20);
ALTER TABLE emp
CHANGE job
job VARCHAR(20) NOT NULL;
```

```
MySQL 8.0 Command Line Client

mysql> DESCRIBE emp;
+-----+-----+-----+-----+-----+-----+
| Field | Type      | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| emp_no | int       | YES  |     | NULL    |       |
| ename  | varchar(20) | NO   |     | NULL    |       |
| job    | varchar(20) | NO   |     | NULL    |       |
| dept_no | int       | YES  |     | NULL    |       |
| sal    | int       | YES  |     | NULL    |       |
| experience | varchar(20) | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
6 rows in set (0.00 sec)
```

2. Create table products with following columns.

ProductID,
ProductName,
SupplierID,
CategoryID,
Unit,
Price
Assume appropriate data types.

Create table customers with the following columns –

**CustomerID,
CustomerName,
ContactName,
Address,
City,
PostalCode,
Country**

Assume appropriate data types.

Insert at least 10 entries in each table.

```
CREATE DATABASE IF NOT EXISTS myshop;
USE myshop;
CREATE TABLE products (
    product_id INT NOT NULL,
    product_name VARCHAR(255),
    supplier_id INT NOT NULL,
    category_id INT NOT NULL,
    unit INT NOT NULL,
    price INT NOT NULL,
    PRIMARY KEY (product_id));

CREATE TABLE customers (
    customer_id INT NOT NULL,
    customer_name VARCHAR(255),
    contact_name VARCHAR(255),
    address VARCHAR(255),
    city VARCHAR(255),
    postal_code INT,
    country VARCHAR(255),
    PRIMARY KEY (customer_id));

INSERT INTO customers
    VALUES (501, "Hasan", "Rakib", "Surathkal", "Mangalore", 575025,
    "India"),
    (502, "Mr Karim", "Mr Karim", "Surathkal", "UP", 575026,
    "India"),
```

```

    (503, "Rahim", "Rahim Ali", "Surathkal", "Delhi", 575035,
"India"),
    (504, "Adnan", "Adnan Rakib", "Surathkal", "Kolkata", 575027,
"India"),
    (505, "Kabir", "Kabir Khan", "Surathkal", "Dhaka", 575000,
"Bangladesh"),
    (506, "Sohag", "Hafizur", "Surathkal", "Bangalore", 575050,
"India"),
    (507, "Tanaf", "Tanzimul", "Surathkal", "San Francisco", 575070,
"US"),
    (508, "Smrity", "Ayaan", "Surathkal", "Paris", 575080,
"Franch"),
    (509, "Liza", "Liza", "Surathkal", "London", 575029, "India"),
    (510, "Thamina", "Fabiha", "Surathkal", "London", 575075, "UK");

INSERT INTO products
VALUES (1, "Apple", 101, 1, 50, 18),
(2, "Orange", 103, 2, 80, 18),
(3, "Cherry", 104, 3, 10, 32),
(4, "Strawberry", 107, 44, 50, 44),
(5, "Grape", 110, 5, 16, 57),
(6, "Pears", 108, 6, 20, 59),
(7, "Berries", 109, 7, 25, 70),
(8, "Melons", 106, 8, 52, 60),
(9, "Mango", 105, 9, 30, 180),
(10, "Banana", 102, 27, 50, 10);

```

a. Increase the price of all products by 5 and display it as 'Price+10' in products table.

```

SELECT
    *,
    price*5 AS "price+10"
FROM products

```

```
MySQL 8.0 Command Line Client
mysql> SELECT
-> *,
-> price*5 AS "price+10"
-> FROM products;
+-----+-----+-----+-----+-----+-----+-----+
| product_id | product_name | supplier_id | category_id | unit | price | price+10 |
+-----+-----+-----+-----+-----+-----+-----+
| 1 | Apple | 101 | 1 | 50 | 18 | 90 |
| 2 | Orange | 103 | 2 | 80 | 18 | 90 |
| 3 | Cherry | 104 | 3 | 10 | 32 | 160 |
| 4 | Strawberry | 107 | 44 | 50 | 44 | 220 |
| 5 | Grape | 110 | 5 | 16 | 57 | 285 |
| 6 | Pears | 108 | 6 | 20 | 59 | 295 |
| 7 | Berries | 109 | 7 | 25 | 70 | 350 |
| 8 | Melons | 106 | 8 | 52 | 60 | 300 |
| 9 | Mango | 105 | 9 | 30 | 180 | 900 |
| 10 | Banana | 102 | 27 | 50 | 10 | 50 |
+-----+-----+-----+-----+-----+-----+-----+
10 rows in set (0.01 sec)

mysql>
```

b. List all the items from products whose price = 18

```
SELECT *
FROM products
WHERE price = 18
```

```
MySQL 8.0 Command Line Client
mysql> SELECT *
-> FROM products
-> WHERE price = 18;
+-----+-----+-----+-----+-----+-----+
| product_id | product_name | supplier_id | category_id | unit | price |
+-----+-----+-----+-----+-----+-----+
| 1 | Apple | 101 | 1 | 50 | 18 |
| 2 | Orange | 103 | 2 | 80 | 18 |
+-----+-----+-----+-----+-----+-----+
2 rows in set (0.00 sec)

mysql> ss
```

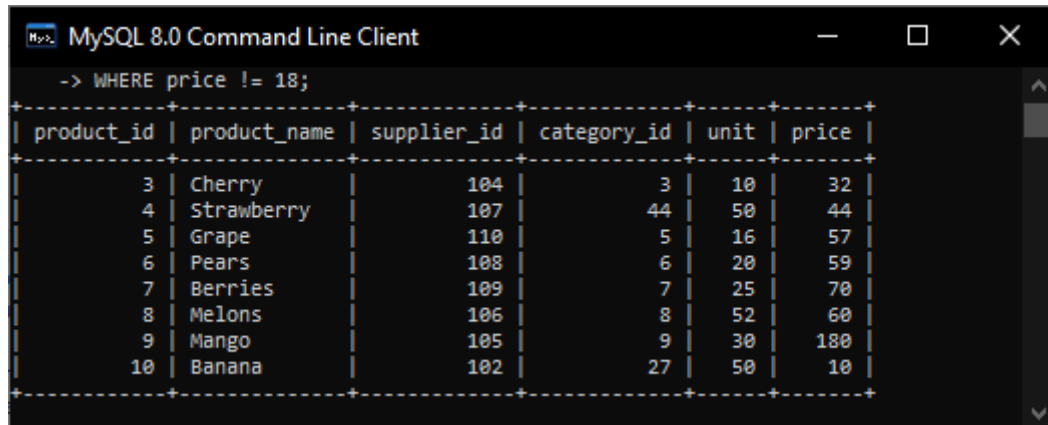
c. List all the items from products whose price is more then 30

```
SELECT *
FROM products
WHERE price > 30
```

```
MySQL 8.0 Command Line Client
-> WHERE price > 30;
+-----+-----+-----+-----+-----+-----+
| product_id | product_name | supplier_id | category_id | unit | price |
+-----+-----+-----+-----+-----+-----+
| 3 | Cherry | 104 | 3 | 10 | 32 |
| 4 | Strawberry | 107 | 44 | 50 | 44 |
| 5 | Grape | 110 | 5 | 16 | 57 |
| 6 | Pears | 108 | 6 | 20 | 59 |
| 7 | Berries | 109 | 7 | 25 | 70 |
| 8 | Melons | 106 | 8 | 52 | 60 |
| 9 | Mango | 105 | 9 | 30 | 180 |
+-----+-----+-----+-----+-----+-----+
7 rows in set (0.00 sec)
```

d. List all the items from products whose price is not equal to 18

```
SELECT *  
FROM products  
WHERE price != 18
```



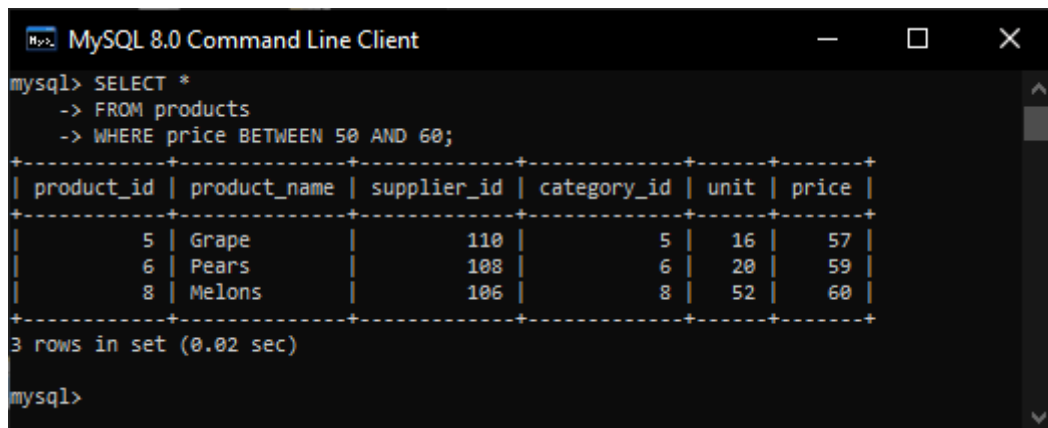
MySQL 8.0 Command Line Client

```
-> WHERE price != 18;
```

product_id	product_name	supplier_id	category_id	unit	price
3	Cherry	104	3	10	32
4	Strawberry	107	44	50	44
5	Grape	110	5	16	57
6	Pears	108	6	20	59
7	Berries	109	7	25	70
8	Melons	106	8	52	60
9	Mango	105	9	30	180
10	Banana	102	27	50	10

e. List the items from products whose price is between 50 and 60

```
SELECT *  
FROM products  
WHERE price BETWEEN 50 AND 60
```



MySQL 8.0 Command Line Client

```
mysql> SELECT *  
-> FROM products  
-> WHERE price BETWEEN 50 AND 60;
```

product_id	product_name	supplier_id	category_id	unit	price
5	Grape	110	5	16	57
6	Pears	108	6	20	59
8	Melons	106	8	52	60

3 rows in set (0.02 sec)

mysql>

f. List the customer details from customers whose city is London and country is UK.

```
SELECT *  
FROM customers  
WHERE city = "London" AND country = "UK"
```



```

MySQL 8.0 Command Line Client
3 rows in set (0.02 sec)

mysql> SELECT *
-> FROM customers
-> WHERE city = "London" AND country = "UK";
+-----+-----+-----+-----+-----+-----+-----+
| customer_id | customer_name | contact_name | address | city | postal_code | country |
+-----+-----+-----+-----+-----+-----+-----+
|          510 | Thamina      | Fabiha      | Surathkal | London | 575075 | UK      |
+-----+-----+-----+-----+-----+-----+-----+
1 row in set (0.03 sec)

mysql>

```

g. List the customer details from customers whose city is London or country is UK.

```

SELECT *
FROM customers
WHERE city = "London" OR country = "UK"

```

```

MySQL 8.0 Command Line Client

mysql> SELECT *
-> FROM customers
-> WHERE city = "London" OR country = "UK";
+-----+-----+-----+-----+-----+-----+-----+
| customer_id | customer_name | contact_name | address | city | postal_code | country |
+-----+-----+-----+-----+-----+-----+-----+
|          509 | Liza         | Liza        | Surathkal | London | 575029 | India   |
|          510 | Thamina      | Fabiha      | Surathkal | London | 575075 | UK      |
+-----+-----+-----+-----+-----+-----+-----+
2 rows in set (0.00 sec)

mysql>

```

h. List the customer details from customers whose city matches with the list of cities among Paris, London, San Francisco.

```

SELECT *
FROM customers
WHERE city IN ("Paris", "London", "San Francisco")

```

```

MySQL 8.0 Command Line Client

-> FROM customers
-> WHERE city IN ("Paris", "London", "San Francisco");
+-----+-----+-----+-----+-----+-----+-----+
| customer_id | customer_name | contact_name | address | city | postal_code | country |
+-----+-----+-----+-----+-----+-----+-----+
|          507 | Tanaf        | Tanzimul    | Surathkal | San Francisco | 575070 | US      |
|          508 | Smrity       | Ayaan       | Surathkal | Paris | 575080 | Franch  |
|          509 | Liza         | Liza        | Surathkal | London | 575029 | India   |
|          510 | Thamina      | Fabiha      | Surathkal | London | 575075 | UK      |
+-----+-----+-----+-----+-----+-----+-----+
4 rows in set (0.00 sec)

mysql>

```